Ham-Space Digest   Fri, 7 Oct 94   Volume 94 : Issue 282

Today's Topics:
                        AEA DSP-1232 problem
                         Phase schedules
              SATTRACK V2.0 FOR UNIX/LINUX AVAILABLE NOW
                         Tracking models ?

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 5 Oct 94 16:18:56
From: n4hy@tang.ccr-p.ida.org (Bob McGwier)
Subject: AEA DSP-1232 problem

It depends on what your radio is as to how it functions. What type of
radio are you using?

Bob
--
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(609)-279-6240(v) (609)-924-3061(f)| District and Council Activities Chair.
(609-443-8963 (h) | I used to be a Buffalo . . . NE III-120

Date: 6 Oct 94 12:54:47 GMT
From: dmgillah@mtu.EDU (David Gillahan)

Subject: Phase schedules

Howdy! I was womdering if any of you know where I can find updates of
the phase schedule for varies satellites. Example: AO-13 Phase 1-180:mode B
                                                    Phase 180-256:mode J

That was the last update I have as of 20APR94, I'd like to get something
more recent. Thanks!
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* Talk to ya, Dave   Attention all Skydivers: *
*   Until you've jumped   *
* Michigan Technological University   into pitch blackness   *
* Where it's too &@#% cold!   at 1250 feet with 80   *
* dmgillah@mtu.edu   pounds of combat gear, *
* kb8por@w8yy.#upmi.mi.usa.na   YOUR STILL A LEG !!!   *
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Date: 6 Oct 1994 03:33:17 GMT
From: manfred@sunspot.ssl.berkeley.edu (Manfred Bester)
Subject: SATTRACK V2.0 FOR UNIX/LINUX AVAILABLE NOW

SatTrack V2.0 Release

Finally version 2.0 of SatTrack is ready to be released. This new version
features the NOARD SGP4 propagation model, a live display for a single
satellite as well as a live display for multiple satellites (as many as the
computing power of the machine it runs on allows), a batch mode with arguments
passed on the command line, and the orbit prediction capabilities that V1.7
had. Numerous suggestions from users of V1.7 all over the world have been
incorporated in the new version, like tracking of the Sun and the Moon for
system tests and EME, respectively, the calculation of off-pointing (squint)
angles, and also some subroutines that allow control of ground station
equipment (radios and antenna controllers). The framework for the latter
is provided in a way that allows the user to easily make changes for a
particular application. The program will run on Sun workstations and
Linux i386 laptop computers (see documentaion file).

Future releases are expected to feature the SDP4 model for satellites with a
period of more than 225 minutes (V2.1) and Xwindows graphics (V3.0).

Bob Kupiec was kind enough to provide an FTP site from which SatTrack can
be obtained. Do the following:

    ftp ftp.jvnc.net   (128.121.50.2)
    login anonymous

```
    cd /priv/kupiec/incoming    (or later: cd /priv/kupiec/sattrack)
    get sattrack.V2.0.tar.Z
```

Place this file into your Unix home directory, uncompress it, and then
type 'tar xvpf sattrack.V2.0.tar'. This will unbundle the distribution file
and will create all necessary sub-directories. Then look into the documentation
file 'sattrack.doc' in SatTrack/doc for instructions how to compile sattrack
(and some other auxiliary programs). It should compile perfectly on at least
Sun-3's (SunOS 4.0.3), SPARCstation IPCs (SunOS 4.1.1) and i386 laptops
running Linux. Make sure the compiler and linker flags in the Makefile
are configured properly!

Please let me know how the installation went and if you encountered any
problems, bugs or imperfections.

Manfred Bester

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Date: Thu, 6 Oct 94 22:50:34 GMT
From: srghsjm@grv.grace.cri.nz
Subject: Tracking models ?

In Article <1994Oct6.065111.1@violet.ccit.arizona.edu>
dpalik@violet.ccit.arizona.edu writes:
>What is the difference between the Tracking models (SGP4 propagation model, and
>the others) ??

For various reasons (including computational simplicity) the complicated
models that were historically developed have been simplified and refined
to models such as SGP4. By doing so, some new parameters have had to be
added to the basic element sets. The other most common prediction model
around seems to be the TBUS predictor that uses (as expected) some TBUS
elements.

>
>Is one more accurate ?
>

That's actually a more difficult question to answer than it seems. The
accuracy can be required for either short term or long term periods.

For all practical purposes, with the range of element sets that are
available over Internet, all models are pretty good (or, equally bad,
depending on your point of view).

>Do they all require the same data from TLE sets ?
>

No. The SGP4 predictor uses NASA 2-line elements that are designed
for SGP4. The NASA 2-line element format allows for SGP8, but I don't
think that was used (correct me if I'm wrong). SGP8 requires some
extra parameters. The TBUS predictor (used often in earth resources
satellites and for many low earth orbit ground stations) uses parameters
from TBUS element sets. Don't use TBUS elements in the SGP4 model, or
the reverse.

The W3IWI predictor model (a la "Orbit" circa 1986 or something like that)
is simplified model that, while cutting a few corners, takes a fairly
practical line in doing so.

Source code for SGP4 and TBUS predictors is available (albeit in FORTRAN),
but various people have converted these to Pascal and C. The results
are variously readable code...

Stephen ZL4HG


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